



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,076	12/22/2000	Wm. Troy Tack		9505

27007 7590 03/05/2002

TRI-KOR ALLOYS, LLC
5401 TWIN KNOLLS ROAD
SUITE 11
COLUMBIA, MD 21045

EXAMINER

WESSMAN, ANDREW E

ART UNIT	PAPER NUMBER
----------	--------------

1742

3

DATE MAILED: 03/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

TPO

Office Action Summary	Application No.	Applicant(s)
	09/681,076	TACK ET AL.
	Examiner	Art Unit
	Andrew E Wessman	1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-21 is/are rejected.

7) Claim(s) ____ is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. ____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. Claims 1-21 have been submitted for examination.

Claim Objections

2. Claims 2, 3, 5, 6, 9, 10, 12, and 13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims recite a yield strength range that is larger than the range of the previous claim.

3. Applicant is advised that should claim 16 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 7, 14, and 21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as

Art Unit: 1742

to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In regards to claims 7, 14, and 21, nowhere in the specification is there mention of forming the billet using powder metallurgy or spray casting techniques.

In regards to claim 1, there is no mention in the specification of providing an alloy with a density of less than 0.106 pounds per cubic inch.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 5, 8 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, the numerical ranges for the elemental compositions are written as "6.2 9.0 wt% Zn", when it is thought that the claim should be written as "6.2 to 9.0 wt% Zn". Correction is solicited for the sake of clarity.

In claims 1, 8 and 15, the term "may be" renders the claim indefinite. The term fails to positively recite a step in the method.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1742

9. Claims 1-6, 8-13, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyasato et al. (U.S. Patent No. 5,865,911) in view of 2002 Bushmaster arms catalog.

Miyasato et al. teaches (claims 38, 39, 42, and 43) a process for producing aluminum alloy structural members for aircraft. The process involves alloying aluminum to create a starting material, homogenizing the alloy material, providing a shaping process such as rolling, extrusion, or forging, solution treating the alloy, quenching the alloy, and then artificially aging the alloy. Miyasato et al. also teaches (see abstract) that the alloy may optionally be machined at intermediate steps of the process. Miyasato et al. teaches (claim 38) that the products should possess a yield strength of at least 62 ksi. Miyasato et al. teaches (col. 5, line 52) that the alloy can be cast to make a suitable starting material.

Miyasato et al. does not teach providing an alloy with a density of less than 0.106 pounds per cubic inch. However, because the composition and processing method of the Miyasato et al. products and those of the claimed invention are the same, one of ordinary skill in the art would expect the density to also be the same.

Miyasato et al. does not teach using the process to manufacture gun frames or gun components.

Bushmaster Firearms catalog 2002 teaches (page 3, "Receiver Features") gun receivers made from a similar aluminum alloy that has been subjected to similar production methods. Bushmaster teaches using aircraft quality 7075 aluminum in a T6 temper (T6 temper being a standard designation for an aluminum that has been solution

- Art Unit: 1742

heat treated, quenched, and artificially aged). Bushmaster also teaches that the gun parts may be forged, and teaches that this type of construction creates safer parts for firing chambers that experience pressures of up to 60,000psi. Bushmaster also discloses that the company has been making upper and lower receivers for firearms with the same materials since the early 1980's (see attached email from company representative).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the aluminum alloy of Miyasato et al. to manufacture firearms parts as taught by Bushmaster, because aluminum is a desirable construction material for firearm because of the safety provided by aluminum's ability to withstand high pressures generated in firearms operation, as taught by Bushmaster.

In regards to the features of claims 2, 3, 9, 10, 16, and 17, Miyasato et al. teaches (claim 38) that the parts should have a yield strength of at least 62 ksi.

In regards to the features of claims 4-6, 11-13, and 18-20, Miyasato et al. teaches (claims 38 and 39) treating a starting stock by solution heat treatment, quenching, and artificial aging, and then machining the component to the final desired dimensions. Miyasato et al. also teaches (claim 38) providing the product with a yield strength of at least 62 ksi.

In regards to the features of claims 8 and 15, Miyasato et al. teaches (col. 3, lines 1-5) using an Al-Zn-Mg-Cu alloy comprising 5.2-6.8wt% Zn, about 1.6-2.1wt% Mg, about 1.7-2.4wt% Cu, and about 0.03-0.3wt% Zr. Miyasato et al. also teaches a method for manufacturing products made of that material (see claims 38, 39, 42, and

Art Unit: 1742

43). Miyasato et al. does not disclose the entire claimed range of the composition of the aluminum alloy material. However, in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), MPEP 2144.05.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shahani et al. (U.S. Patent No. 6,027,582) teaches aluminum alloy compositions and methods of manufacture for producing aluminum alloy products.

Hunt, Jr. et al. (U.S. Patent No. 5,221,377) teaches aluminum alloy compositions and methods of manufacturing for producing aluminum alloy products.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew E Wessman whose telephone number is (703)305-3163. The examiner can normally be reached on Monday through Friday, 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703)308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

AEW
February 28, 2002

R
ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700